

*What we claim is:*

1. An organ or biological tissue preservation aqueous cold storage solution comprising:  
a prostaglandin having vasodilatory, membrane stabilizing, platelet aggregation prevention upon reperfusion, and complement activation inhibitory properties;  
a nitric oxide donor; and  
a glutathione-forming agent.
2. The cold storage solution of claim 1 wherein the prostaglandin comprises prostaglandin E1.
3. The cold storage solution of claim 1 wherein the prostaglandin has cellular and organelle membrane stabilization properties and cytoprotective properties.
4. The cold storage solution of claim 1 wherein the nitric oxide donor comprises nitroglycerin.
5. The cold storage solution of claim 1 wherein the glutathione-forming agent comprises N-acetylcysteine.
6. The cold storage solution of claim 1 further comprising potassium lactobionate,  $\text{KH}_2\text{PO}_4$ ,  $\text{MgSO}_4$ , and raffinose.
7. The cold storage solution of claim 1 further comprising adenosine, allopurinol, and pentastarch.
8. The cold storage solution of claim 1 further comprising NaCl and KOH.
9. The cold storage solution of claim 1 wherein the prostaglandin comprises about 100-5,000mcg/L prostaglandin E1, the nitric oxide donor comprises about 1-10mg/L nitroglycerin, and the glutathione-forming agent comprises about 0.1-4mg/L N-acetylcysteine, further comprising:  
about 50-150mM potassium lactobionate;  
about 10-40mM  $\text{KH}_2\text{PO}_4$ ;  
about 2-8mM  $\text{MgSO}_4$ ;  
about 10-50mM raffinose;  
about 1-20mM adenosine;

about 1-10mM allopurinol; and  
about 40-60g/L pentastarch.

10. The cold storage solution of claim 1 wherein the prostaglandin comprises about 250-3,000mcg/L prostaglandin E1, the nitric oxide donor comprises about 2-7mg/L nitroglycerin, and the glutathione-forming agent comprises about 0.5-2mg/L N-acetylcysteine, further comprising:

about 75-125mM potassium lactobionate;  
about 20-30mM  $\text{KH}_2\text{PO}_4$ ;  
about 3-7mM  $\text{MgSO}_4$ ;  
about 20-40mM raffinose;  
about 2-10mM adenosine;  
about 1-5mM allopurinol; and  
about 45-55g/L pentastarch.

11. The cold storage solution of claim 1 wherein the prostaglandin comprises about 500mcg/L prostaglandin E1, the nitric oxide donor comprises about 5mg/L nitroglycerin, and the glutathione-forming agent comprises 1mg/L N-acetylcysteine, further comprising:

about 100mM potassium lactobionate;  
about 25mM  $\text{KH}_2\text{PO}_4$ ;  
about 5mM  $\text{MgSO}_4$ ;  
about 30mM raffinose;  
about 5mM adenosine;  
about 1mM allopurinol; and  
about 50g/L pentastarch.

12. The cold storage solution of claim 1 further comprising sterile water.

13. A preserved organ or biological tissue comprising at least one of a cadaveric organ and tissue within a cold storage solution of claim 1 in at least one of a deep hypothermic condition and physiological condition.

14. The preserved organ or biological tissue of claim 13 wherein the cold storage solution is infused into vasculature of at least one of a cadaveric organ, living donor organ, and tissue.

15. The preserved organ or biological tissue of claim 13 wherein the deep hypothermic condition comprises a temperature of about 2-10°C.
16. The preserved organ or biological tissue of claim 13 wherein the physiological condition comprises a temperature of about 37°C.
17. The preserved organ or biological tissue of claim 13 wherein the cold storage solution is cooled to below 10°C.
18. The preserved organ or biological tissue of claim 13 wherein any precipitates in the cold storage solution are removed prior to use.

19. An organ or biological tissue preservation aqueous cold storage solution comprising:  
about 100-5,000mcg/L prostaglandin E1;  
about 1-10mg/L nitroglycerin;  
about 0.1-4mg/L N-acetylcysteine;  
about 50-150mM potassium lactobionate;  
about 10-40mM  $\text{KH}_2\text{PO}_4$ ;  
about 2-8mM  $\text{MgSO}_4$ ;  
about 10-50mM raffinose;  
about 1-20mM adenosine;  
about 1-10mM allopurinol;  
about 40-60g/L pentastarch; and  
about 700-900mL sterile water.

20. A method for preserving an organ or biological tissue comprising:  
flushing at least one of a cadaveric organ and tissue with a cold storage solution,  
comprising a prostaglandin with vasodilatory membrane stabilizing, platelet aggregation  
prevention upon reperfusion, and complement activation inhibitory properties, a nitric oxide  
donor, and a glutathione-forming agent;  
allowing the flushed at least one of a cadaveric organ and tissue to be enveloped in the  
cold storage solution; and

27. The method of ~~claim~~ 25 further comprising:  
infusing the pentastarch under pressure through a dialyzing filter;  
centrifuging the prostaglandin E1 under hypothermic conditions; and  
filtering the centrifuged prostaglandin E1.